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Patrick M. Teterud

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TEXAS INSTRUMENTS INCORPORATED

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DALLAS, TX 75265

EXAMINER

PATEL, ISHWARBHAI B

ART UNIT

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2827

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/044,678
Filing Date: January 11, 2002
Appellant(s): TETERUD ET AL.

W. Daniel Swayze, Jr.
For Appellant

EXAMINER'S ANSWER

MAILED
JUL 13 2004
GROUP 2800

This is in response to the appeal brief filed May 24, 2004.

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(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

No amendment after final has been filed.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

The 102 rejection of claims 1-6 has been withdrawn.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 1-6 do not stand or fall together. Nevertheless, the brief does not provide any reason. Only argues about the patentability of claim 1. Therefore, claims 1-6 do stand or fall together.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

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| | | |
|-----------|------------------|-----------|
| 5,774,291 | Contreras et al. | 5,774,291 |
| 6,246,121 | Dandia et al. | 6,246,121 |

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Contreras et al., US Patent No. 5,774,291, hereafter, Contreras, in view of Dandia et al., US Patent No. 6,246,121, hereafter, Dandia.

Regarding claim 1, Contreras disclose a communication chip for a head comprising connection points (flexible circuit comprising circuitry implemented in an integrated chip, see figures 1 and 2, column 4, line 35-45), but

fails to explicitly disclose the arrangement of the connection points in form of first row and second row.

Dandia discloses a generic bump patterns 112 on peripheral portions 106, see figure 1A-1B-1C.

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Further, various layout of the connection points can be provided on the chip depending upon the specific applications and a person of ordinary skill in the art will provide the chip with one fixed connection points or may provide a generic layout which can be used for different connections.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the circuit board of Contreras with connection points in the form of first row and second row, as taught by Dandia, in order to have desired connections of the components.

Regarding claim 2-5, the combination of Contreras and Dandia further discloses the first and second row of connection point.

Regarding claim 6, the combination of Contreras and Dandia further discloses said first and second row extend along two sides of said communication circuit, see Contreras, figure 1A-1B-1C.

(11) Response to Argument

Appellant's first arguments for the rejection of claims 1-6 under 35 USC § 102 by Banouvong, states that Banouvong does not disclose or suggest the presently claimed invention including the communication chip being connected to the head through the first and second rows of connection points and does not relate to a head. **These arguments are found persuasive and the rejection is**

withdrawn.

Appellant's second arguments for the rejections of claims 1-6 under 35 USC § 103 by Contreras in view of Dandia, states that Contreras does not disclose or suggest the presently claimed invention including the second row of connection points positioned along at least on edge of the communication circuit or behind the first row and the communication chip being connected to the head through the first and second rows of the connection points, and Dandia does not disclose or suggest the presently claimed invention including the communication chip being connected to the head through the first and second rows of connection points and Dandia does not disclose a head. **These arguments are not found persuasive.**

Appellant has performed a piecemeal analysis of the applied prior art. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The primary reference of Contreras discloses an arm electronic (AE) unit 192, figure 1 and 2, which include a printed circuit board 193 and an AE 194 module mounted on a printed circuit board (or a flexible circuit). The module comprises circuitry preferably implemented in an integrated circuit (IC) chip,

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including read drivers, write drivers, and associated control circuitry. The module is coupled via connections in the printed circuit board to the read / write channel and also to each read head and each write head in the plurality of head blocks, column 4, line 31-45. Contreras does not disclose the details of the connection points on the chip. Contreras mainly discloses details about the voltage measurement circuit for a magnetoresistive head installed in a disk enclosure.

The secondary reference of Dandia discloses a high performance flip-chip semiconductor device with generic bump patterns on the flip-chip device. Dandia discloses bumps 112 in various rows and columns, figure 1A-1B-1C, on peripheral portions 106, figure 1A-1B-1C, column 2, line 58 to column 3, line 15, to optimize electrical performance, column 1, line 5055. Though, Dandia does not disclose the specific use of the chip for the head, it discloses the generic arrangement of the bumps on a chip, which can be used for connecting various element as required in a device.

A person of ordinary skill in the art would have recognized the advantage of providing generic bump layout, which will facilitate connections to various different elements of the device.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the circuit board of Contreras with connection points in the form of first row and second row, as taught by Dandia, in order to have desired flexibility of connecting the element of the device to optimize the performance.

This is an obvious type rejection and the test for obviousness is not

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whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


I B Patel
July 9, 2004

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